SUMMARY TRANSLATION OF "RADIO" NO. 08/1993 (AUGUST 1993)

[Rough, summary translations of selected articles, mostly about amateur radio, from the monthly magazine **RADIO**.]

[As part of their support of the activities of the International Amateur Radio Union, the Region 1 IARU Secretariat and The American Radio Relay League, Inc. generously reimburse subscription and postal expenses.]

[Square brackets set off material added by the translator **and not appearing in the original** -- such as a comment, reference, or equivalent expression in another language.]

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TRANSLATOR'S NOTE

The article summarized on page 2 below provides background information on subscription prices of RADIO magazine and mentions its "sister" publication, SW JOURNAL (KV ZHURNAL).

With the possible exception of this single article, RADIO #08/1993 contains little of interest concerning amateur radio in the narrow, Western, sense of the term. Most such material appears to have been transferred to SW JOURNAL (KV ZHURNAL). See Annex.

Please send corrections and comments, for possible inclusion in a future issue, to:

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p 2: "ONLY ... LEFT BEFORE THE END OF THE SUBSCRIPTION PERIOD" ["DO KONTSA PODPISKI OSTALOS' ..."], from the Editors.

The twentieth is always the most hectic day of the month because that's when the current issue of RADIO is finished and sent to the printer. But the pressure was especially great this June because a report was due from Rospechat'[1] on the results of the RADIO subscription period for the second half of 1993. We wondered whether our readers would support the magazine. They did.

Two price jumps prior to the subscription period for the second half of 1993 caused RADIO to lose a fair number of subscribers though a noticeably lower percentage than other periodicals. A new round of inflation forced the editors to raise the price to 115 rubles per issue[2] for the second half of 1993. Again the magazine lost part of its subscribers; about 250000 subscribed, though some late subscriptions may come in. We had included this drop in subscriptions in our calculations, so barring new cataclysms the magazine will survive until the end of the year.

By the time you read this, the subscription period for the first half of 1994 will be in full swing. The price will be 950 rubles per issue.[2] The editors had to set this price in June 1993, meaning they had to predict the rate of inflation. It might be well to recall the subscription period for the first half of 1993, when the price was set at 35 rubles per issue.[2] that price seemed very high when it was set and ludicrously low by June. The shock of the new price will also pass very soon, but even today it equals that of a half kilogram of medium-grade sausage.

There is a 3- to 4-month delay in our receiving the subscription money from Rospechat'; that's the way Rospechat' works. By then prices will be very different.

One solution would be the Polish version: They say that at one point in the inflationary process in Poland, the subscription period fell to one month. "Rospechat'" currently operates on a six-month-subscription basis. If things don't get better in this country, it may go over to a three-month schedule.

During a four-month period in the first half of 1993, the price of paper more than quadrupled and Rospechat' more than doubled the cost of its services -- from 5 to 11 rubles an issue.

The new price is calculated on an assumed "average" rate of inflation and on a minimum circulation of 150000 copies. Again its for you, dear friends, to decide whether the magazine will survive.

We are continuing to publish supplements [prilozheniya] to "Radio" magazine -- the magazine "SW Journal" ["KV zhurnal"] and the newspaper "Radiomarket" ["Radiobirzha"], which are not distributed by "Rospechat'." It is possible to subscribe to SW JOURNAL and to RADIOMARKET at the RADIO editorial offices.

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[1]Rospechat' is the Russian successor to the Soviet Soyuzpechat'.

[2]These prices appear in a table in summary translation #09/1993.

Summary translation of KV zhurnal (SW Journal) #02/1992[3], signed to press 18 February 1993[3]. Background information on the magazine appears in summary translations RADIO #07/1992, page 11, and RADIO #08/1992, pages 8 and 9. The magazine is not available through the normal international subscription channels. My thanks to Dave Sumner, K1ZZ, for providing the first two issues.]

Outer front cover, as identified at bottom of inner front cover: V. Bagdyan, RV3AO, creator of the repeater in Moscow.[4] The premises for the repeater were provided by BCS [Bank Communications Systems - Bankovskiye kommunikatsionnyye sistemy].

Inner front cover: [Same as issue #01/1992; see summary translation RADIO #07/1993, page 5.]

Page 1: "DR YL ES OM!" by Boris [Grigor'yevich] Stepanov, UW3AX.

Would-be subscribers to "SW Journal" in "nearby foreign countries,"[5] especially in Ukraine, have run into problems forwarding postal money orders to Russia.

Another problem has been the disappearance of uniform postal rates for the Commonwealth of Independent States. This would mean different subscription rates for each country of the CIS, but we didn't change rates for 1993 subscriptions since the subscription period had already started when the postage-rate changes occurred. Other costs will also rise, including in Russia. For example, as of 1 February the price for paper again jumped substantially.

We are trying to cope, initially, with the problem of delivering "SW Journal" to our Ukrainian subscribers by sending the magazine there in bulk and having it mailed out at the still modest internal Ukrainian rate. By the way, 20% of our subscribers live in Ukraine, 2.8% in Kazakhstan, 1.7% in Belarus', and about 2% in countries (other than Russia) of the CIS.

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[3]The labeling of this issue as No. 2 for 1992 and the "signed-to-press" date of 18 February 1993 suggest a delay in publishing this second issue of "SW Journal."

[4]The R3A repeater is apparently located in the building formerly occupied by the now-defunct SEV [sovét ekonomícheskoy vzaimopóshchi - Council of Economic Mutual Assistance], the Soviet/East European equivalent of the European Common Market. This skyscraper is not far from the U.S. Embassy.

[5]The Russian term is "v stranakh 'blizhnego zarubezh'ya'" -- literally "in countries of the 'nearby foreign area'" -- presumably referring to all of the countries on the territory of the former USSR, with the exception of Russia and the possible exception of the Baltic States.

In Russia, publication of Decision [Postanovleniye] No. 30 of 15 January 1993 on the use of HF devices may impact radio amateurs as well as the importation and exportation of equipment.

Some readers have urged the magazine to become involved in the forwarding of QSL cards. Of course, SW Journal can't organize its own QSL bureau. This is matter for the national amateur societies in the CIS that do not yet have QSL bureaus. As a shortwaver, I hope very much that the Union of Radioamateurs of Russia will soon get on its feet and include a QSL bureau. Then other societies, which due to financial difficulties have not yet been able to establish national QSL bureaus, may find it easier to do so.

Well, and what about "SW Journal"? We invite radioamateurs to inform us of the addresses of all QSL bureaus at all levels, which we are prepared to publish on a regular basis. In 1993 we'll also publish a list of worldwide QSL bureaus.

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pp 2 - 3: NEWS [NOVOSTI]:

p 2: IARU REGION 1.

[Continuation of report on meeting of IARU Region 1 Executive Committee.] Contest categories, e.g. SOSB (SINGLE OPERATOR SINGLE BAND). From IARU Region 1 HFC Newsletter No. 29.

p 2 - 3: JARL.

The JARL operates 18 beacons, most of them on 1.2, 2.4, and 5.7 GHz. On HF, the JA1IGY beacon operates around the clock on 14100 kHz on c.w.; JA1RL operates Tuesdays, Thursdays, Saturdays, and Sundays for one hour beginning at 0600 UT on 7030 kHz ± 5 kHz on c.w. From JARL News, February 1992.

p 3: IN THE COUNTRIES OF THE CIS.

The Ministry of Justice of Ukraine has registered the League of Radioamateurs of Ukraine [Liga radiolyubiteley Ukrainy - LRU]. The president of the LRU is N. Gostryy, UB5UT. The League's address is Ukraina, 252001, Kiyev, ab. yashch. 57 [P. O. Box 57, 252001 KIEV, Ukraine]. The address of the QSL bureau is Ukraina, 252001, Kiyev, ab. yashch. 56 [P. O. Box 56, 252001 KIEV, Ukraine].

In late December 1992, the Union of Radioamateurs of the Republic of Kazakhstan [Soyuz radiolyubiteley Respubliki Kazakhstan - SRRK] received notification that it had been registered. V. Nikulin, UL7BN, from Akmola, was elected president of the SRRK and A. Makayenko, UL7EZ, from Shchuchinsk, was elected vice president. The SRRK Council [Sovet SRRK] also includes A. Il'inskiy, RL7AE, from Aktau, I. Marchenko, UL7BF, from Akmola, A. Azhmukhametov, UL8PC, from Karaganda, A. Shvindt, UL7FEC, from Pavlodar, V. Avkhimovich, UL7YA, from Yesil', and A. Chernykh, UL7PAE, from Karaganda. The SRRK's address is Kazakhstan, 473033, g. Akmola, ab. yashch. 620 [P. O. Box 620, 473033 AKMOLA, Kazakhstan]. Its telephone number is 4-83-23.

The Association of Amateurs of Radiocommunication of St. Petersburg [Assotsiatsiya lyubiteley radiosvyazi Sankt-Peterburga] has received the status of a juridical person. Its president is Ya[kov Semenovich] Lapovok, UA1FA, a well-known constructor of amateur equipment. Its address is Rossiya, 191011 Sankt-Peterburg, ab. yashch. 7 [P. O. Box 7, 191011 ST. PETERSBURG, Russia].

The "Official Legal Channel" ["Ofitsial'nyy pravovoy kanal"], which operates Fridays beginning at 1800 MSK on 3620 kHz with UV9OO as net control, is considering scheduling the 2nd All-Siberian Conference of Radioamateurs [vsesibirskaya konferentsiya radiolyubiteley] in Novosibirsk the second Sunday of June 1993.

The organs of justice have registered the "Russian Robinson" amateur travelers' club [klub radiolyubiteley-puteshestvennikov "Russkiy Robinzon"]. V. Sushkov, RW3GW, is president, Yu. Zaruba, UA9OBA, vice president, and I. Nasonov, RA3GJ, secretary.

p 3: SRVS CONFERENCE.

The second conference of the SRVS [Soyuz radiolyubiteley Vooruzhennykh Sil - Union of Radioamateurs of the Armed Forces] was held in late 1992. It examined SRVS activities during 1992, its financial situation, and the activities it plans for 1993.

The conference noted that the SRVS had been registered as a social organization. On-the-air activity days had been organized to publicize the SRVS and increase its authority. Thanks to the SRVS, an instruction on development of amateur radio in the Armed Forces had been put into force; it permits all military and civilian personnel in the Armed Forces to engage in amateur radio.

S. Smirnov, UC2SF, was elected president of the SRVS, V. Bobrov, UT5UKV, and B. Orlov, UA1CDW, vice presidents, and A. Simukhin, RA3ARN, responsible secretary; other members of the SRVS council are B. Andryushchenko, UT5TA, V. Grigor'yev, UV3DNT, B. Orlov, U1CH, S. Ostapenko, and V. Semenov, RA2FM.

p 3: UCWC.

The conditions for membership in the radiotelegraph club UCWC have been changed. Now, in order to join the club, it is sufficient to have been awarded three diplomas [certificates] for c.w. operation and one diploma of the UCWC club.

Membership is also available on recommendation of one active club member.

Write to 250000, Ukraina, Chernigov, ab. yashch. 28, UB1RR[6] [UB1RR[6], P. O. Box 28, 250000 CHERNIGOV, Ukraine].

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[6]Vlad(imir) Stepanenko, UB5RR, and Roman ("Romeo") Stepanenko, 3W3RR/AHØM/RV7RR, are apparently father and son. Vlad Stepanenko's (UB5RR) address is given in the International Listings of the Callbook as Box 28, 250000 CHERNIGOV [Ukraine].

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pp 4 - 17: ON THE AIR [V EFIRE], edited by O. Arkhipov, UA3TJ:

pp 4 - 7: COMPETITIONS, edited by V. Latyshenko, RB5QW, President of the Ukrainian Contest Club, Zaporozh'ye, Ukraine..

CHERNOBYL' MEMORIAL. [25 - 26 April 1993.] [Callsigns of members of the Radioamateur Association "Union - Chernobyl'."] [See NLD-1573 in summary translation RADIO #02/1993, p 14.]

SSTV COMPETITIONS 'RUSSIA.' [20 March 1993.] [See NLD-1569, in summary translation RADIO #01/1993, p 13.] [Results of SSTV Competitions of 1992.]

ARRL DX CONTEST. [Results.]

CQ WW 160 METER DX CONTEST. [Results.]

JA DX PHONE CONTEST. [Results.]

pp 8 - 9: DIPLOMAS AND PENNANTS.

"SLOVAKIA."

"300th ANNIVERSARY OF THE RUSSIAN NAVY" [300 LET ROSSIYSKOMU VMF]. [VMF = voyenno-morskoy flot = military-maritime fleet = Navy.]

The "300th Anniversary of the Russian Navy" pennant, established by the "Pobeda" ["Victory"] Coordinating Council, is available to radio amateurs throughout the world for earning 300 points between 1 January 1992 and 31 December 1996.

QSOs with the naval hero-cities Kerch', Leningrad, Murmansk, Novorossiysk, Odessa, and Sevastopol' are worth 20 points apiece. Only one contest with each of these cities is counted; one contact with each is obligatory.

QSOs with cities linked historically with the Navy -- Arkhangel'sk, Vladivostok, Volgograd, Voronezh, Kaliningrad, Korsakov, Kronshtadt, Nikolayev, Petropavlovsk-Kamchatskiy, Riga, Tallinn, and Khabarovsk -- are worth 10 points apiece. Only one contact with each of these cities is counted; a contact with each is not obligatory.

QSOs with other cities having naval ports are worth 5 points apiece. Only one contact with each of these cities is counted, up to a total of five.

QSOs with R3ØØF [QSL route RA3DKM per article on page 13 of original], which will operate in radioexpeditions dedicated to the anniversary, will be worth 30 points apiece. Repeat QSOs with this station will count if made on different bands or during different expeditions.

QSOs with Navy veterans of the Great Patriotic War are worth 5 points apiece. Repeat QSOs count only if made on different bands. If the Navy veteran has become a silent key, a QSO with him counts no matter when it was made.

QSOs with active or former postwar members of the Navy or members of the VPA [expansion unknown] are worth 1 point apiece. Repeat QSOs count if made on different bands.

In applying for the pennant, alphabetize the call-signs of the stations worked under each category. Show the names of cities which have naval ports or which are historically linked with the Navy. Have the application verified by a radio amateur organization or by two amateurs who have individual call-signs. Send the application to 143590, Rossiya, Moskovskaya obl., g. Snigiri, ab. yashch. 1, Masychevu M.A. [M. A. Masuchev, P. O. Box 1, 143590 SNIGIRI, Moskovskaya Oblast', Russia].

Payment for the pennant and for postage (30 rubles) should be sent to the same address but only after being informed that the application has been accepted or after receiving the pennant by collect mail.

For Navy veterans of the Great Patriotic War, the diploma is free, but they must have no fewer than 300 QSOs between 1 January 1992 and 31 December 1996.

Analogous conditions apply to SWLs.

Radioamateurs who served with the Navy during the Great Patriotic War: U1AO[7], U1AU, U1DL, UA1GI, UA1NCM, UA1II, UA1PU, U2IZ, UA2FH, UC2OW, UQ2CS, U3AHB, U3DK, U3DW, U3OY, U3DZ, U3LI, U3TA, U3VJ, RA3AJ, RA3TAO, UA3GC, U3MB, UW3EJ, UA3-127-306, U4AM, U4HK, UA4-156-1, UA4-156-66, U5HK, U5NM, U5UD, U5GD, UB5QJ, UT5CR, UT5RS, U6AS, U6DM, U6DS, U6GA, U6LI, UA6LK, UD6BI, UF6AF, UG6SG, U7VAB, U8NE, U9CF, U9CW, UV9DB, U9DF, U9PE, U9UAA, U9YD, UØAZ, UØJE, U1PR, U3DO, U3PB, YL2CS, U5JQ, and 4X4CD (ex-U1CD).

Navy veterans of the Great Patriotic War who are silent keys: U1CC, RA1AF, UA1AUI, U2MM, U3LAI, UA3TR, UV6UD, UØAV, and UØLU.

"SPASSK." [See also NLD-1579 in summary translation RADIO #05/1993, page 11.]

The "Spassk" diploma has been established by the House of Children's Creativity [Dom detskogo tvorchestva] of the town of Spassk-Dal'niy, Primorskiy Kray [in the Russian Far East]. To receive the diploma, three QSOs with Spassk-Dal'niy made not earlier than 1 January 1990, are required. Repeat QSOs are permitted if made on different bands.

The cost is 15 rubles including postage; 10 IRCs or US$5.00 for foreigners. Send log extracts to Rossiya, 692210, Primorskiy kray, g. Spassk-Dal'niy, ab. yach. 76, Dom detskogo tvorchestva, Khabi V.I. [V. I. Khabi, House of Children's Creativity, P. O. Box 76, 692210 SPASSK-DAL'NIY, Russia].

The following operate from Spassk-Dal'niy: UZØLXB, UZØLXH, RAØLMD, UAØLT, UAØLBD, UAØLCO, UWØLAE, UWØLAO, UWØLBH, UWØLBO, UWØLBP, UWØLCT, UWØLDM, UWØLDM [repetition in original], UWØLDP, UWØLED, UWØLII, UVØLM, and UVØLQ.

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[7]The single-letter prefix identifies the holder as a veteran of the "Great Patriotic War" (approximately equivalent to World War II).

pp 9 - 10: "ISLANDS ON THE AIR" ["OSTROVA V EFIRE"].

ADDITIONS TO THE IOTA LISTING.

ACHIEVEMENTS.

"Radiocommunication" magazine for June 1992 published an honor roll of 112 holders of the IOTA diplomas for working more then 340 islands confirmed. Unfortunately, no U/R stations were included. The first six listed were F9RM (647 islands), I1ZL (639), VE3XN (622), G3KMA (620), G3AAE (617), and EA4MY (608).

Of the 208 holders of the basic diploma (100 islands confirmed), the following ex-U stations are included: UA6AF (239), LY2BZ (205), RA6YJ (132), UW3RR (116), and UW9SG (104).

Yuriy, YL1XZ, informs us that he has forwarded QSLs confirming 520 islands to the IOTA committee.

Anyone wishing to do so may send his results once every two months to the writer of this column, UY5XE, at Ukraina, 290000, g. L'vov, ab. yashch. 19, Chliyantsu G.A. [G. A. Chliyants, UY5XE, P. O. Box 19, 290000 L'VOV, Ukraine].

Applications for IOTA diplomas and QSLs for verification are to be sent to the IOTA committee: John L. Hall, G3TOK, 54 South Eden Park Road, Benkenham, Kent BR3 3BG, ENGLAND.

NEW "IOTA" CLUB. An "SP IOTA CLUB" has been established in Poland. Contact Rafail Krawiec, SP6TPM, P. O. Box 22, 48-100, Glubezyce, POLAND.

pp 11 - 12: FREQUENCY PLAN FOR IARU REGION 1.

TABLE 1: Frequency Plan for IARU Region 1. [CW only and CW/PHONE segments.]

TABLE 2: Preferable frequencies for various modes. [RTTY, DX windows, CONTEST CW, CONTEST PHONE, PR, SSTV, etc.]

TABLE 3: Band segments reserved for beacons and satellites.

p 13: QSL INFO.

[128 QSL routings, plus 51 QSL routings for CQ WW SSB 92.]

p 14: DX NEWS [DX VESTI].

DXCC. [Nineteen stations are listed with dates between which they count toward DXCC.] [Inclusion of Croatia, Slovenia, and Bosnia and Herzegovina in DXCC listing.] [ARRL announcement that date from which contacts count for 5 BAND DXCC has been changed from 1 January 1969 to 15 November 1945, when U.S. amateurs were allowed back on the air following World War II.] [News concerning individual DXCC countries.]

MISCELLANY [VSYAKAYA VSYACHINA].

[CEPT amateur licenses.]

The microbeacon OKØEN operates in Kladno on 3600 kHz c.w. with a power of 150 mW. The antenna is a folded dipole [? - ugolkovyy dipol']. Reception reports may be sent to Mirek Najman, OK1DUB, Karlovarska 364, Kamenne Zehrovice, CSFR 27301.

The American magazine "CQ" not only issues several popular diplomas [diplomy, i.e. certificates], but maintains tables of achievement for these diplomas. Such a table is usually called an HONOR ROLL ("Pochetnyy spisok"). The December 1992 issue of "CQ" published an HONOR ROLL for the WPX diploma. ...

Politics, alas, regularly creates problems on the amateur bands. Last year [1991?], a great deal of emotion was created by the operation of 1B1NCC in the "Turkish" part of Cyprus. ... According to "CQ," some even tried to block the station with intentional interference; "CQ" pleaded with amateurs not to allow Greek/Turkish antagonism [to spill over] onto the amateur bands.

SATELLITES [ISZ = iskusstvennyye sputniki Zemli = (literal translation "artificial satellites of the Earth" = artificial earth satellites = satellites].

In May 1993, a new satellite, RS15, is expected to be launched into a 2300 km circular polar orbit. The satellite weighs about 70 kg. It does not have a system for orienting itself in space.

In the satellite is a BRTK-11 on-board radioequipment complex designed by the volunteer laboratory of space equipment attached to the State Museum of the History of Cosmonautics Named After K. E. Tsiolkovskiy, whose chief contructor is A. Popkov[8].

The BRTK consists of a linear retranslator with two radio beacons, an on-board memory device ("bulletin board") with a memory capacity of 2 kilobytes, and a device for receiving control commands and transmitting telemetry information.

The on-board receiver operates in the segment 145857 - 145897 kHz and transmits on 29357 - 29397 kHz. Beacon 1 [Mayak 1] radiates on 29398 kHz and Beacon 2 on 29353 kHz. The output power of the translator is 5 Watts and that of the beacons 0.4 to 1.2 W.

The ROSTO Scientific-research Laboratory of Aerospace Equipment, whose collective station is RS3A, is coordinating preparatory work for the launching and operation of the satellite.

p 16: FM COMMUNICATION AND REPEATERS.

[Map of Poland, showing repeater locations.]

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[8]Aleksandr Pavlovich Papkov, UA3XBU, was mentioned in the same connection in RADIO #05/1987 and RADIO #10/1987.

pp 16 - 17: ULTRASHORTWAVE [UKV].

COMPETITIONS.

Not that many ultrashortwavers around the world engage in "Moon" communication, due to the high-class equipment required.

One would think we would have an especially difficult time with EME communication, but the results of the ARRL INTERNATIONAL EME COMPETITION show that we have quite a few "Moonsters" ["lunniki"]. [Tables follow, showing callsigns of stations that took first place and runner-up "ex-U" stations with the place they took.] [Translator's note: Since these data presumably originated with ARRL, they are not being reproduced here. I would be happy to provide them on request. See my address at bottom of page one.]

"ACHIEVEMENTS" ["DOSTIZHENIYA"].

Given below is information on achievements of Russian ultrashortwavers as of the end of 1992. The columns have the following meanings: Call - station; WW - worldwide locator square; EU - European QTH locator; WK - number of locator squares [worked]; TR, AU, MS, and ES - maximum distance (in kilometers) of QRB-tropo, QRB-aurora, QRB-meteor, QRB-ES; SQR - number of fields; DXCC - number of DXCC countries; WAS - number of U.S. states; Ant - antenna used.

Call	WW	EU	WK	TR	AU	MS	ES
144 MHz							
RA3LE	KO64	QO	446	1807	2061	2273	2524
UV1AS	KO59	PT	427	1709	1905	2271	2547
RA3YCR	KO73	RN	420	1835	1964	2255	2429
UA3TCF	LO26	WQ	306	1131	1996	2498	2332
RW3RW	LO02	UM	297	1298	2098	1740	2834
UA3DHC	KO96	TQ	289	1766	1891	2180	2429
UA4API	LO20	WK	271	1127	1820	--	--
UA4NM	LO48	YS	265	1215	1850	2510	2290
UZ2FWA	KO04	KO	261	912	1759	2125	2010
UV6AKO	KN84	SE	235	1155	960	2017	2567
RA6HHT	LN05	UF	224	1255	1827	1827	2782
UA4UK	LO14	VO	215	--	--	--	--
UZ3TXB	LO16	VQ	183	1163	1941	2145	--
RA3TES	LO15	VP	177	1074	1935	2144	2247
UA3RBO	LO03	UN	169	952	1909	2137	2378
UA6LGH	KN97	TH	169	1918	758	1918	2167
UA3MAS	KO97	TR	167	1667	1752	1884	1996
UW3ZD	KO81	SK	126	1713	2126	1755	2363
RV3ZR	KO80	RK	124	1045	1956	1785	2077
UA4CFV	LO32	XM	118	1311	1824	--	2415
UA4AQL	LO20	WK	116	1123	2055	2158	1962
UA9XQ	LP63vm	--	107	626	1832	2018	1656
UW4AK	LO20	WK	106	1125	1481	2028	2283
UA3TIE	LO16	VQ	104	1161	1766	1808	1929
UA9XEA	LP63um	--	89	776	1636	2034	1646
UW9AH	LO93kk	--	64	1310	1746	1989	1385

Call	WW	EU	WK	TR	AU	MS	ES
430 MHz							
RA3LE	KO64	QO	249	2031	1855	1440	--
UA6LGH	KN97	TH	182	2216	--	--	--
RA3YCR	KO73	RN	147	1671	1788	--	--
UA3DHC	KO96	TQ	101	1596	1009	--	--
UV1AS	KO59	PT	90	1709	1121	--	--
RW3RW	LO02	UM	73	1275	1284	--	--
UA4NM	LO48	YS	58	1230	--	--	--
UA3MAS	KO97	TR	57	1254	1251	--	--
UA4UK	LO14	VO	51	1433	1296	--	--
UA3TCF	LO26	WQ	51	1131	1542	--	--
RA6HHT	LN05	UF	33	1030	--	--	--
UA4API	LO20	WK	32	1127	--	--	--
UA3TIE	LO16	VQ	25	1161	1082	--	--
RA3TES	LO15	VP	21	1074	--	--	--
UA3RBO	LO03	UN	19	478	--	--	--
UA4CFV	LO32	XM	7	1308	--	--	--
UW4AK	LO20	WK	6	678	--	--	--
1.2 GHz							
RA3LE	KO64	QO	52	1428	--	--	--
RA3YCR	KO73	RN	36	657	--	--	--
UA3MAS	KO97	TR	11	265	--	--	--
UA6LGH	KN97	TH	9	464	--	--	--
RW3RW	LO02	UM	8	400	--	--	--
UA3TCF	LO26	WQ	5	455	--	--	--
UA3TIE	LO16	VQ	2	403	--	--	--

"ACHIEVEMENTS OF ULTRASHORTWAVERS OPERATING VIA THE MOON"
["Dostizheniya ul'trakorotkovolnovikov po rabote cherez Lunu"]

Call	WW	EU	WK	SQR	DXCC	WAS	Ant
144 MHz							
UA9FAD	LO88da	--	291	--	49	35	4x16 F9FT
UA3TCF	LO26	WQ	145	--	30	--	8x9 F9FT
UZ2FWA	KO04	KO	114	--	28	--	8x3,6 DJ9BV
RA3YCR	KO73	RN	109	--	33	24	--
RA3LE	KO64	QO	94	--		--	2x8 m LY
UV1AS	KO59	PT	52	--	21	--	4x12 NBS
UA9XEA	LP63	AX	49	20	20	--	4x17 F9FT
UA3MAS	KO97	TR	11	--	5	--	4x9 F9FT
UA6LGH	KN97	TH	2	--	1	--	16 elem.
430 MHz							
RA3YCR	KO73	RN	187	--	46	--	--
UA6LGH	KN97	TH	163	--	38	--	16x15 elem.
UA9FAD	LO88da	--	113	--	32	--	8x16 elem.
RA3LE	KO64	QO	92	--	--	--	2x8 m LY
UA3TCF	LO26	WQ	30	--	11	--	8x14 quagi
UA9XEA	LP63	AX	23	11	11	--	8x23 DL6WU

Please mail information on achievements of ultrashortwavers of Russia to the Ultrashortwave Committee of the Union of Radioamateurs of Russia [UKV komitet SRR], at 603000, Nizhniy Novgorod, ab. yashch. 73 [P. O. Box 73, 603000 NIZHNIY NOVGOROD] or report it to collective station UZ3TXB, which operates regularly in the European UKV Net (14345 kHz ±QRM).

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pp 18 - 38: EQUIPMENT [TEKHNIKA]:

pp 18 - 23: DX-ER'S TRANSCEIVER [TRANSIVER DX-MENA], by Ya[kov Semenovich] Lapovok, UA1FA.

pp 25 - 27: A SIMPLE FM TRANSCEIVER [PROSTOY ChM TRANSIVER], from "PZK Biuletyn."

p 28 [advertisement][9]: "NOVOSIBIRSK - SEATTLE INTERNATIONAL LTD" [foregoing in English and in Latin script] -- "ELECTRONIC AUTOMATIC KEY" ["ELEKTRONNYY AVTOMATICHESKIY KLYUCH"]. Send orders to Rossiya, 630092, Novosibirsk-92, ab. yashch. 4, NSI LTD [NSI LTD, P. O. Box 4, 630092 NOVOSIBIRSK-92, Russia]. Call Yuriy Zaruba, UA9OBA/N7UJZ, or Yuriy Sushkin, UA9OPA/N7UJN, on (3832) 46-27-65 (best time from 1500 to 1800 MSK) to determine current price. Keyer will be sent within 72 hours after receipt of pre-payment.

pp 29 - 31: MULTI-FREQUENCY DIPOLE ANTENNAS [DIPOL'NYYE ANTENNY -- MNOGOCHASTOTNYYE], by Yu. Lavrenko, U1BA, St. Petersburg.

p 31: "ATWD" [Australian Traveling Wave Dipole] ANTENNA, from CQ, October 1974, p 25, "Antennas," by William Orr, W6SAI.

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[9]The April 1993 "CQ" magazine, page 139, advertised the "ARE-90 Chrome Paddle," made by the joint venture Novosibirsk-Seattle International, Ltd. and Amateur Radio Engineering, Inc., P. O. Box 169, Redmond WA 98073, telephone 206 882 2837.

pp 32 - 34: PACKET COMMUNICATION [PAKETNAYA SVYAZ'], by V[asiliy] Zaushitsyn, RW3DR, Moscow.

PACKET COMMUNICATION CONTROLLERS TNC-1 AND TNC-2

BAYCOM, PMP, TFPCX

NATIONAL TNC APPLICATIONS [OTECHESTVENNYYE REALIZAZII TNC]

Since packet communication was permitted here only two years ago, we're noticeably behind in designing and building packet communication controllers. Small enterprises are just now getting started in attempts to manufacture them. As a rule these are well-known foreign controllers modified for our microprocessors. Unfortunately, our country doesn't have analogues of all microprocessors used in TNCs, so making an exact copy of a foreign controller isn't possible.

Most often, Z-80A microprocessors are used in TNCs. Our industry is just getting set to manufacture them, so all nationally-made models use foreign Z-80As.

Ye. Labutin, RA3APR,[10] is considered the author of the first TNC-APR controller circuit to appear in this country. This is almost an exact copy of the DL1KAG packet communication controller, whose circuitry was described in "RTTY Magazine" #06/1985. The TNC-1 is based on a Z-80A. The RAM [OZU] is based on a 537RU10 microcircuits and the ROM [PZU] on a 573RF4 and other microcircuits in the 561 and 140 series.

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[10]Yevgeniy Leonidovich Labutin, RA3APR, is the author of an article entitled "Packet Communication: Protocol AX.25," that appeared in RADIO #03/1989, pp 10 - 13. He is the son of Leonid Mikhaylovich Labutin, UA3CR/AB4LZ, a well-known radio amateur who had his Soviet callsign taken away and was successful in having it restored.

A L'vov version of a TNC, similar to the MFJ-1270 controller, can be considered the second model to appear in our country[11]. It uses a Z-80A microprocessor. The controller of the HDLC is a Z-80A-SIO/0 [???]. A 565RU6 microcircuit is used in the RAM [OZU] and a 573RF4 in the ROM [PZU]; a 564GG1 and series-561 microcircuits are used in the modem.

Later came a TNC, designed in Kiev and planned for production by the Khar'kov Construction Technology Bureau [Khar'kovskoye konstruktorsko-tekhnologicheskoye byuro] headed by V. Skrypnik, UY5DJ. [Dr.] S[ergey Georgiyevich] Bunin, UB5UN, took an active role in designing the circuitry. This TNC is completely based on domestically-made microcircuits. It uses a 580BM80 microprocessor. Its RAM is based on 565RY5 microcircuits and its ROM on [a?] 573RF4[s?]. Unfortunately, this PNC is not very stable and operates at a transmission speed of 1200 Baud, evidently due to the low speed of its 580BM80 microprocessor. Also, the commands of this TNC don't correspond at all with [accepted] standards.

There are also Krasnodar and Belarus' (Molodechno) variations of TNCs, as well as the Moscow TNC-SVL, TNC-APW, and TNC-COMPAS which are copies of the TINY-2. All of these models use a standard set of foreign microcircuits, Z-80A-CPU, Z-80A-SIO/0, 62256, and 27256; the only difference is in the modem. Some TNCs use foreign microcircuits, the TCM-3105 or the AM-7910, while others use modems analogous to the L'vov TNC, based on 564GG1 and other KMOP microcircuits. This modem, by the way, is described in RADIO #06/1991, pp 23 - 25.

For operation at speeds of over 1200 Baud, different modems are used, employing different modulation schemes, for example PSK (Phase Shift Keying). The most popular are PSK modems designed by G3RUH and DP9IC. Documentation on the G3RUH-960 is available on RK3KP. K. Tadevasyan, RA3APW, has modified this modem so that it uses only domestically-made microcircuits.

[To be continued]

pp 38 - 39: AZIMUTH TO A DX STATION [AZIMUT NA DX STANTSIYU].

[Modified version of BASIC program described in "Amateur Radio Software," a book by John Morris, GM4ANB, RSGB, 1985.]

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[11]The meaning of the phrase "in our country" (v náshey strané) is unclear, given that fact that, with the breakup of the USSR L'vov and Moscow are in separate "countries" -- Ukraine and Russia. The context suggests a loose use of the phrase, perhaps encompassing all of the former Soviet Union with the possible exception of the Baltic States.

pp 40 - 41: LET'S GET ACQUAINTED -- UDXC! [BUDEM ZNAKOMY -- UDXC!], by Ye. Yermachkov, RBØHZ, Poltava, Ukraine.

[Introduction] In 1987, DX-ers formed the UDXC, attached to the former CRC of the USSR Named After E. T. Krenkel'. Many well-known DX-ers and several collective stations belonged. Presently over three hundred radio amateurs from twenty DXCC countries are UDXC members. [End introduction]

Who Runs the Club?

The club Council [Sovet] and the president [prezident] of the Council, Anatoliy Vasil'yevich Kucherenko, UT5HP, were elected at the founding conference of the club, held at St. Petersburg in 1989. The Council was elected for a three-year term, and was re-elected for another term at the regular UDXC conference held at Lugansk in 1991. Besides the president, the Council includes the secretary [sekretar'], treasurer [kasnachey], a revision group [revizionnaya gruppa], net controls of "round tables" and radio amateur nets, and publishers of club bulletins.

What Does the Club Do?

First of all, it publicizes DX-ing and collects and distributes information on DXpeditions. It assists amateur radio expeditions and partially finances them from its UDXF fund. The club publishes information and DX bulletins, conducts annual Activity Days and weekly "round tables," assists in receiving DX QSL cards, and issues "UDXC" diplomas [certificates] and endorsements [nakleyki, literally "stickers"] to them. It conducts intra-club contests [vnutriklubnyye konkursy] among members and candidate members.

Saturdays and Sundays we invite everyone to a "Round table" ["kruglyy stol"] held on 14300 kHz beginning at 0700 UT, with Viktor Smol'yanov, UA4PNL, as net control. Detailed information is provided on DXpeditions, rare DX stations, and various amateur radio organizations and clubs.

Yuriy Bogachev, YL1XZ, provides QSL information, information on rules for diplomas [certificates], and responses to any questions on DXing.

Vasiliy Kas'yanenko, UW6HS, and Konstantin Dorofeyev, RV6HA, are responsible for the "QSL Service" and help in receiving QSL cards from the most "impenetrable" QSL managers, and by the way at a most reasonable cost [??? - prichem, za ves'ma uslovnuyu platu] covering postage only. Club members receive a 50% discount.

Information on the club's DX bulletin is available by writing to its president, Anatoliy Vasil'yevich Kucherenko, UT5HP, P. O. Box 1, 348903 SCHAST'YE, Luganskaya Oblast', Ukraine. Published by UT5HP, YL1XZ, UW6HS, UW3RR, and UA6XT, it contains the most up-to-date DX and QSL information.

The club Council conducts an Activity Day on the third Sunday of April. All are invited to participate and to compete for prizes provided by the "Oktaviya" firm.

To obtain a "UDXC" diploma, work 25 members or candidate members of the club. Detailed rules will appear in a future issue.

The UDXF fund helped finance several of expeditions by Roman, 3W3RR,[6], as evidenced by the UDXC emblem on his QSL card. By the way, Roman Stepanenko, 3W3RR, and Vladimir Stepanenko Senior [stárshiy], UB1RR,[6] are members of the club.

...

The club has its own net control, Nikolay Lavreka, RB5FF, from Izmail, Odesskaya Oblast' [Ukraine]. The UDXC net has helped many amateurs make interesting contacts on 160m and 80m, but due to being very busy, Nikolay conducts his UDXC NET basically during the winter period, on Tuesdays and Thursdays at times when he is free.

What is Needed to Join the Club?

The conditions are not very difficult. You need the R-150-S [Worked 150 Countries] and UDXC diplomas [certificates], plus the desire to be a club member. Send the numbers and dates of these diplomas with your application to UT6HP. The club has a one-time membership fee and annual dues, which, unfortunately, due to inflation, constantly change. The club president will advise you of the amount in his reply to your membership application. If you wish, you may also make a contribution of any amount to the UDXF.

Upon receipt of the "250" endorsement to the R-150-S diploma, you advance from candidate member to [full] member of the club. (Collective stations need the "300" sticker.) Each candidate member and [full] member is assigned a number. That's why during Activity Day one hears 5927, 5918K, 59950, 59960K, and so forth -- signal report and membership number.

The club president and secretary are authorized by the diploma service of the Central Radio Club of Russia, which issues the UDXC diploma, to verify QSL cards for the R-150-S diploma, so there's no need to send an application and QSL cards to the CRC. The president and secretary will check everything themselves and forward your application to the CRC. Just include postage for return of your QSL cards.

The club and its fund have their own diplomas, pins, and emblems, which are for sale and will be sent, if you indicate in your application that you want them. Almost every UDXC candidate member and [full] member has a stamp with the club emblem.

What are the Club's Difficulties?

Many! Recently a serious financial problem has arisen. With the introduction of separate currencies in various countries of the Commonwealth of Independent States, we have the problem of deciding in which currency to accept membership dues.

Changeable postage rates are also a problem, since the club maintains constant correspondence with its members both in the Commonwealth of Independent States and elsewhere.

Post office lawlessness has perhaps affected no one more than the shortwaver. Envelopes are opened, stamps torn off, and it is not rare for postal correspondence to disappear altogether. For example, some of the prizes sent out by the "Oktaviya" firm to the winners of the 1992 Activity Day vanished without a trace.

We are thinking about establishing a diploma for contacting analogous DX clubs around the world. We've thought up a name for the diploma and have worked up draft rules, but where can we find the money to get the diplomas printed? This is beyond the club's means. However, despite everything, we hope for the best and are continuing to operate.

pp 42 - 43: "EXPEDITION TO MYANMAR," by R[oman] Stepanenko, 3W3RR,[6] Moscow.[12]

As pointed out earlier, we had planned to fly to the M'yey Islands[13]. We transferred our equipment to a camouflaged helicopter. It turned out that a location had been prepared for us in a completely different place in the area of the Golden Triangle or more precisely 160 km from its geographical center. I looked at a map and saw it was 1000m to 2000m above sea level. Excellent. We would be heard better and might be spared snakes and mosquitos. True, the latter did not turn out to be entirely the case.

We flew at a low altitude toward Laos, refueling once along the way. One border guard[14] officer spoke a little Russian and, like us, was flying to the Golden Triangle for the first time. By the way, the area had a bad reputation among the military.

Finally we landed, completely exhausted. Gena, UA9MA,[15] was walking away from the helicopter, his head held high, and the helicopter blades were dropping as they lost speed. Suddenly we all cried out at once -- Gena fell to the ground, his face covered with blood. I jumped out of the cabin, breaking a toe, which I didn't notice until later. What had happened to Gena? It turned out everything was more or less OK -- two deep cuts which we cleansed and bandaged, hoping there would be no infection. Gena gradually came to himself and even began joking.

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[12]Continuation of series by 3W3RR/AHØM/RV7RR on DXpedition to Burma. See Summary Translation RADIO #07/1993, pp 16 - 18.

[13]Retransliterated. Doesn't appear in atlases I've consulted.

[14]In the USSR, the border guards were a uniformed element of the KGB, a fact that may have colored the attitude of the visitors.

[15]Gennadiy I. ("Gena") Kolmakov, UA9MA, his wife Ol'ga Kolmakova, and Sergey Kruglov, UA9MC, visited Washington DC in November 1989.

The "Honda-2800" generators and fuel for them were already waiting for us in the area provided to us, having been delivered on the yacht from Singapore to the M'yey Islands and transferred here, evidently with great effort, by the Burmans. The area provided measured 20 x 30m and was guarded. Orders from above were that we were not to go beyond. It was categorically prohibited to install antennas with aluminum or steel elements -- on pain of expulsion from the country. We were stunned. How could we operate? With what antennas? However, we were lucky: There turned out to be several high trees within the area. We measured out 21m of wire and produced a good old "Afghan Special" -- an exact copy of the antennas used for the first YAØRR expedition. We had to remember our mountain-climbing skills and climb to a height of 20m. The generators were new; would they start? Evidently they had been transported like potatoes -- they had scratches and dents that suggested they had been tested for durability [prochnost'] with a hammer. One started immediately, the other two didn't.

The historic moment arrived. Who would make the first QSO from here, 30 years after Don Miller, XZ2TH? We drew lots and Igor', RA3AUU, the youngest, won. The guards left us in peace until morning, watching from a distance. The first CQ brought no response. Not surprising since we had one transceiver without an amplifier. The second CQ was answered by DU1EIB, followed by DU1KT, who made the first contact with ISØXV in 1990. Marvelous! Feverishly we hooked up a second FT-990 without an amplifier to the same generator and hung up a second "long wire" antenna 21m long.

The usual "madhouse" ["sumasshedshiy dom"] began. We decided that two operating positions would function 24 hours a day. We put up a tent and put the other equipment there. We concentrated on getting the other two generators started so as to have three operating positions. We disassembled and assembled the generators several times. Even the guards helped, though mostly with advice. Only on the third day did the generators start, only several minutes apart. Then they really heard us in Europe and the USA.

Crawling around like spiders, we managed somehow within three days to string up something resembling a 160-meter antenna. It worked beautifully, probably due to a counter-weight consisting of an empty bottle of "IRISH CREAM"; we had stocked up amply with "IRISH CREAM" at Moscow airport.

Days were hot. Nights were cool but mosquitos came out, as well as various flying insects of unbelievable proportions and unclear intentions. But for some reason, this swarm only bit Igor', RA3AUU. Finally, he got bitten by an insect called "Chuk-Guk" to the point where we had to give him medical care until we returned to Moscow.

On 15 and 20m, propagation to the USA was of very short duration -- two to four hours a day -- so during such periods we only worked stations there. Except for W6s and W7s, the signals were very weak. It became necessary to spread out the enormous numbers of stations in a segment over the whole band since they absolutely wouldn't fit in a narrower segment. As far as the number of bands on which we were worked, Japan certainly had the best situation -- Japanese stations came through at all times, everywhere, and the majority of JA DXers contacted us on 6 to 8 different bands. JL1WPQ managed to work us on all bands, all modes. Europe was in a slightly worse situation -- with those who really tried contacting us on three or more bands. Many on the U.S. East Coast (W1, W2, W3, W8) only made one or two contacts, and these required great effort.

Hence, all weren't in the same situation, but we tried to do everything possible to make the chances for working us the same in all areas. So it was all the more objectionable [obidno] when, blocking the swarm of barely audible signals from W1s and W2s, with propagation just disappearing, a station appeared with a 20 kHz bandwidth and probably a power of 20 kW, identifying itself as an "I" station and for minutes long expressed displeasure over the fact that for a whole hour we were working only the USA. What can one say? You can't forget, if you're a DXer and not a CBer, that others need this QSO just as badly as you do. And if you want to work a new station you must get out of your warm bed 2 or 3 hours early or go to bed late. For some reason, DX stations don't always operate during the evening while you're lazily tuning around and want to be worked right now because you have to go to bed.

Surprisingly, Japan came through only 2 hours a day on 80m and exactly half an hour on 160m. The rest of the time -- zero ["Vse ostal'noye vremya - kak otrubilo -- "... like it was chopped off"].

The first QSO on 160m with Europe was, of course, with Johan, ON4UN, then, of course, with OH1XX. Gena, UA9MA,[15] who likes 160m and likes difficult QSOs, made most of the contacts on 160 and 80m. But we tried to change places as soon as an operator got tired. By the fifth or sixth day, we all stopped being surprised at being heard using a wire antennas strung from trees. In the 70-degree temperature[16], Roman, 4K2OT, managed to catch a cold. We wondered how a person who had worked eight years in the Arctic on Franz Josef Island could catch cold in Asia.

Well, sleeping about three hours a day we began to work the WARC bands where it was much more pleasant to operate; there was no stupid breaking [??? - net bestolkovykh "brekaniy"] and it was immediately obvious that almost everyone was a professional DXer.

(to be continued)

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[16] 70°C (158°F) sounds impossibly high, suggesting a typographical error; 40°C (104°F) sounds more likely.

pp 43 - 44: FLIGHT IN AN AIR BALLOON [POLET NA VOZDUSHNOM SHARE], by P[avel] Zhilin, UA1QE/AM, Vologda[17].

In mid-April 1992, the Radio Club "Vologda" learned of a forthcoming All-Russian Air Navigation Fiesta in the skies of Vologda [Vserossiyskaya fiyesta vozdukhoplavaniya v nebe Vologdy]. One of the initiators and organizers was Aleksandr Zamotayev, RA1QEF. An initiative group was formed and licenses were received for operation from the balloon: Aleksandr Khaydin, RA1QA/AM; Viktor Antonov, UA1QM/AM; Mikhail (Misha) Kutyumov, UA1QV/AM; Pavel Zhilin, UA1QE/AM, the writer. RA1Q/AM was assigned to the base collective station of the Radio Club "Vologda."

The operation was scaled down to a single flight and postponed to 7 May [1992 assumed] due to bad weather. Some fifty QSOs were made on 40m with 8 Watts of power. The burner was so loud that logs for the contacts made were kept on the ground. The altitude of the flight was between 200m and 8m. Callsigns used from the Balloon were Zhilin's own call, UA1QE/AM [assumed], and RW1Q/AM.

p 45: VIZE ISLAND ON THE AIR [V EFIRE o. VIZE], by G[eorgiy?] Chliyants, UY5XE, L'vov, Ukraine.

By the time they read this, many readers will already have worked a new "country" on the R-150-S [Worked 150 Countries] listing -- Vize Island[18].

As QSL manager for 4K4BVI, I've received letters asking now Aleksandr (Sasha) Petrov (also UL7BEO) got on the air.

It all began with the expedition to Izvestiya of the Central Executive Committee Islands [ostrova Izvestiy Ts.I.K.][19] -- 4K4I. I happened to overhear an over-the-air conversation between A. Petrov, a professional radioman on Vize Island, and his colleagues. He was complaining that he couldn't receive an amateur callsign. I asked that a message be passed to Aleksandr asking him to contact me as soon as possible. Soon, after returning home, I received a long letter from Sasha [nickname for Aleksandr]. Back in the autumn of 1990, he had applied to the DOSAAF committee of Krasnoyarskiy Kray, but there wasn't a peep from there. The second time he sent his application through the chief of the collective station of the Krasnoyarsk Radiotechnical School, A. Glotova, UVØBB (who has since become a silent key). This remarkable woman promised to do everything in her power to help. Petrov also had the problem of getting QSL cards printed and routed and ran into many of our other traditional difficulties.

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[17]A Russian city some 400 NNE of Moscow.

[18]At about 79°30'N/77°00'E, in the Arctic Ocean north of Russia.

[19]At about 75°55'N/82°30'E, named after the (previous?) full name of the newspaper Izvestiya.

I wrote immediately, encouraging him as best I could and promising to help him obtain a license. Then, after talking over the air with Nikolay Valentinovich Kazanskiy, UA3AF, I wrote a letter of application to the then Federation of Radio Sport of the USSR; in a flash (by our standards), thanks to UA3AF, I received a copy of the FRS's application to the State Telecommunication Inspectorate for a callsign. As a result, UAØBAZ was issued, and two weeks later 4K4BVI. When I went on the air to congratulate him, I had to break through a PILE-UP. This was understandable -- this was a new R-150-S country, and practically a new island for the IOTA diploma since the stations that operated from there previously didn't have very many QSOs and didn't QSL very well. Besides, the IOTA program wasn't as popular then as it is now.

When I received the first log, I was pleasantly surprised -- the first 4K4BVI QSO was made on 29 April, my birthday.

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pp 46 - 48: RAZNOYE [MISCELLANEOUS].

p 46: SYSTEMS FOR COUNTING TIME [SISTEMY OTSCHETA VREMENI].

Several time systems exist in the world. Radio amateurs bump into some of these often and into others never.

Universal Time [Universal'noye vremya] -- **UT** -- is the mean solar time at the primary [pervichnyy] (main) [(glavnyy)] meridian, received by direct astronomical observation and corrected for the effects of insignificant movements of the Earth relative to its rotation axis.

Greenwich Mean Time [Sredneye grinvichskoye vremya] -- **GMT** -- is the general equivalent [obshchiy ekvivalent] of universal time. Its scale corresponds to the angular position of the Earth around its daily rotational axis and is basically used for astronomical navigation.

International Atomic Time [Mezhdunarodnoye atomnoye vremya] -- **TAI** -- is determined by comparing values of [produced by] very accurate atomic clocks (with an error rate of not exceeding 1 millisecond per 24-hour period) located at world-renouned national observatories. In contrast to UT, TAI does not change with changes in the Earth's rotation speed. TAI is the most accurate and uniform unit of time for scientific purposes.

Coordinated Universal Time [Koordinirovannoye universal'noye vremya] -- **UTC** -- was developed for those needing a time scale directly related to the Earth's rotation. UTC corresponds exactly to atomic time but differs from it in the integral number of seconds. The UTC scale is regulated by adding or subtracting seconds in order to ensure that UTC doesn't differ from UT by more than ± 0.9 second.

Zone Time [Poyasnoye vremya] is a system based on an arbitrary division of the Earth's surface by meridians into 24 time zones. These meridians, called middle [seredinnyye] meridians, are separately from each other by 15°. Greenwich is taken as the zero middle meridian. Theoretically, a time zone is bordered by two meridians 7° 30' away from the middle meridian.

Sometimes you will see EST, CST, MST, or PST as time indications on QSL cards. These correspond to the 5th (75°), 6th (90°), 7th (105°), and 8th (120°) time zones.

Many shortwavers make time-conversion tables such as this one:

GMT	EST	CST	MST	PST
00.00	19.00	18.00	17.00	16.00
.....	.....	.....	.....	.....
19.00	14.00	13.00	12.00	11.00

p 48: "LITERATURE" ["LITERATURA"].

[Description of Japanese magazine "CQ ham radio" with photo of cover of issue No. 6 for 1992.]

p 48: "SILENT KEY" ["ZAMOLCHAL KLYUCH"].

12 January 1993 -- Aleksandr Nikkolayevich Mikhel'skiy, RB5JT, ex-UAØYAD. From RA9CBK.

[End of Annex to RADIO #08/1993]